

# DISTRIBUTION AMPLIFIERS

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PRODUCT REVISION: 0

**DA1913GL**

**1-IN, 2-OUT RGBS  
DISTRIBUTION AMPLIFIER  
USER'S GUIDE**

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**EALTINEX**

SIGNAL  
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SOLUTIONS

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# DISTRIBUTION AMPLIFIERS

## INTRODUCTION

Thank you for purchasing **DA1913GL** Distribution Amplifier. We are sure you will find it a reliable and useful product.

Superior performance for the right price backed by solid technical and customer support is what we have to offer.

The product you are holding in your hands is designed using state-of-the-art technology and is superior to anything available on the market. You will find this and our other products reliable, long lasting, and simple to operate.

We are committed to providing our customers with solutions to the most demanding audio-visual installations at very competitive pricing.

We appreciate your selection of our products and are confident that you will join the ranks of our many satisfied customers throughout the world.

### **This manual covers:**

**DA1913GL** - 1-in, 2-out RGBS Distribution Amplifier with Ground Loop Isolation

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# DISTRIBUTION AMPLIFIERS

## PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1913GL** Distribution Amplifier. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1913GL** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

### 1.1 GENERAL

- Unauthorized personnel shall not open the unit since there are high-voltage components inside.
- Qualified Altinex service personnel, or their authorized representatives must perform all service.

### 1.2 SAFETY GUIDELINES FOR THE RACK-MOUNTING OF THE DA1913GL

- Maximum operating ambient temperature is 35 (degrees C).
- Never restrict the air flow through the devices' fan or vents.
- When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution.
- Connect the unit to a properly rated supply circuit.
- Reliable Earthing (Grounding) of Rack-Mounted Equipment should be maintained.

### 1.3 INSTALLATION

- For best results, place the **DA1913GL** Distribution Amplifier on a flat, level surface in a dry area away from dust and moisture.
- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **DA1913GL** Distribution Amplifier in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke or steam can harm internal components.
- Handle the **DA1913GL** Distribution Amplifier carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on top of the **DA1913GL**. If the **DA1913GL** is to be mounted, to a table or wall, use only Altinex made

mounting accessories like mini mount-bracket (**DA1295FC**) and cables for optimum setup.

- To turn off the main power, be sure to remove the cord from power outlet. The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.
- Do not pull power cord or any cable that is attached to the **DA1913GL** Distribution Amplifier.
- If the **DA1913GL** Distribution Amplifier is not to be used for an extended period of time, disconnect the power cord from the power outlet.

### 1.4 CLEANING

- Unplug the **DA1913GL** power cord before cleaning. Clean surfaces with a dry cloth. Never use strong detergents or solvents such as alcohol or thinner. Do not use a wet cloth or water to clean the unit.

### 1.5 FCC / CE NOTICE

- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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- Any changes or modifications to the unit not expressly approved by Altinex, Inc. could void the user's authority to operate the equipment.

## ABOUT YOUR DISTRIBUTION AMPLIFIER 2

The **DA1913GL** is a 1-in 2-out RGSB distribution amplifier designed to allow the connection of a single computer or interface source to one or two monitors or projectors. The **DA1913GL** also provides ground loop isolation through the use of differential inputs with a common mode rejection of +/-2.0V, making it perfect for applications with challenging power supply scenarios. A ground loop is a type of electromagnetic interference often caused by small, but significant differences in ground voltage between two or more different power sources when equipment using the different power sources is connected by means of video/audio inputs and outputs. A ground loop may also be caused when high current equipment (such as a lighting or air conditioning system) is fed from the same power source as the display equipment.

Though primarily designed to pass an RGSB signal format through 4-BNC connectors for each input/output, the **DA1913GL** can also pass RGSB, Component Video (Y, R-Y, B-Y), S-Video (Y/C), and Composite Video by using the appropriate channels. The **DA1913GL** can pass C-Video and S-Video simultaneously by using Red for C-Video and Green/Blue for Chroma/Luma respectively. The **DA1913GL** is typically used for permanent installation and is supplied with a 12-inch power cable with bare leads requiring the connection of 9V 500mA DC power. The **DA1913GL** does not come with a power adapter; it has to be wired to a power source using the bare leads.

The **DA1913GL** is extremely compact, allowing it to fit nicely into tight spots. It may also be mounted to almost any surface using optional "L" type mini brackets.

Note: A power adapter for the **DA1913GL** must be ordered separately, if required. In the United States, the **PS5502US** Power Adapter can be used, though the connector must be cut off to allow interconnection.

The **DA1913GL** Distribution Amplifier is a state-of-the-art product with a video bandwidth of 350 MHz, enabling it to remain transparent to the video signal passing through it. Each output is individually buffered and is not affected by other output loading.

The common mode range of the **DA1913GL** Distribution Amplifier is +/-2 Volts with a video signal of 1 Volt p-p. In most cases, a ground loop voltage will not exceed 200-300mv, so this range is more than enough to handle even the most severe ground loop problems.

## TECHNICAL SPECIFICATIONS 3

FEATURES/DESCRIPTION	DA1913GL
<b>GENERAL</b>	
<b>Inputs</b>	1
Input Connector	4 BNC Female
<b>Outputs</b>	2
Output Connectors	Two 4 BNC Female
<b>Compatibility</b>	High resolution RGSB, RGSB and RGSBs, Component, S-Video and Composite Video

Table 1. **DA1913GL** General

MECHANICAL	DA1913GL
Material	0.1" Al
Finish	Gray
Top Panel	Lexan
Height (inches)	3.50in (89mm)
Width (inches)	4.56in (116mm)
Depth (inches)	0.94in (24mm)
Weight (pounds)	0.6lbs (0.27kg)
Ship Weight (pounds)	2.0lbs (0.91kg)
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. **DA1913GL** Mechanical

ELECTRICAL	DA1913GL
<b>Input Video Signal</b>	
Analog Signal	1.5V p-p max
Impedance	75 Ohms
<b>Input Sync Signal</b>	
Horizontal, Vertical, & C-Sync	TTL(+/-)

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Sync on Green	-0.3V
Impedance	10k Ohms
<b>Output Video Signals</b>	
Analog Signal	1.0V p-p/0.7V p-p
Fall/Rise Time (ns)	1.4
Impedance	75 Ohms
<b>Output Sync Signal</b>	
Composite Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	22 Ohms
<b>Frequency Compatibility</b>	
Horizontal	15-200 kHz
Vertical	47-180Hz
Minimum Video Bandwidth	350 MHz @ -3dB
Typical Video Bandwidth	380 MHz @ -3dB
<b>Common Mode Rejection</b>	+/-2V (w/signal of 1V)
<b>Coupling</b>	AC
<b>Cross-talk</b>	-40dB @ 10MHz
<b>Power</b>	
External Power Adapter (AC)	9V 500 mA
<b>Power Consumption</b>	

Table 3. DA1913GL Electrical

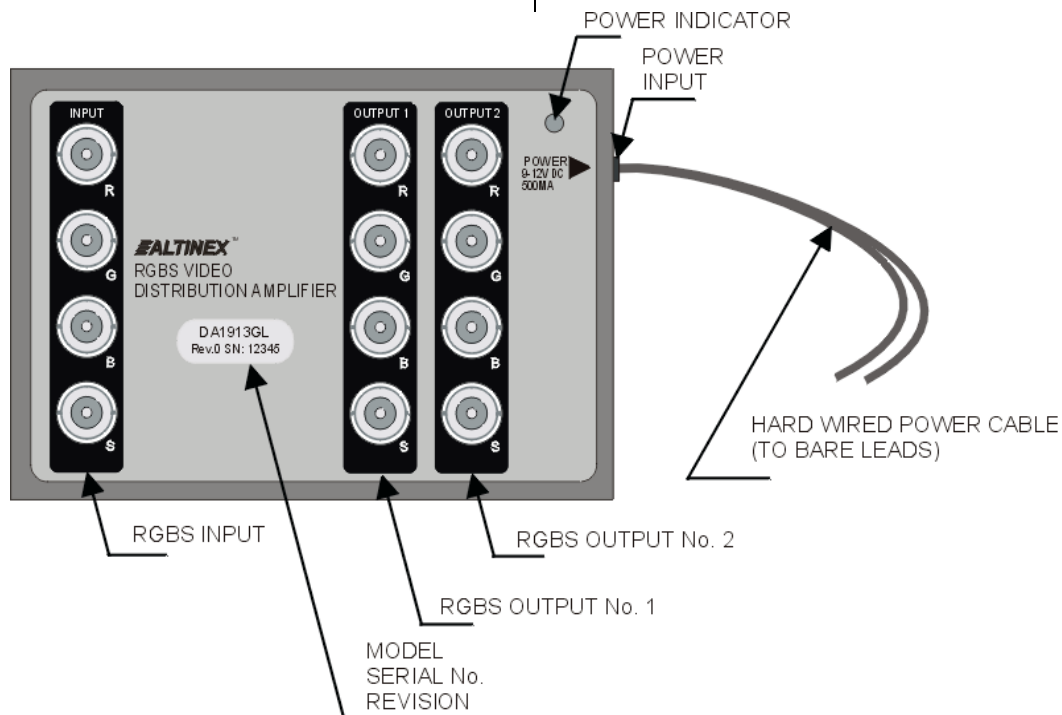
## 4.1 POWER

The **DA1913GL** requires the use of a 9-12V DC 500mA power supply. The **DA1913GL** is provided with a hard-wired 12-inch power input cable with bare leads on the end.

## 4.2 MOUNTING THE DA1913GL

To mount the **DA1913GL**, Altinex offers "L" shape mini-brackets, **DA1295SX**, which provide wings on either side of the unit, allowing it to be installed on a rack plate, furniture, or a wall.

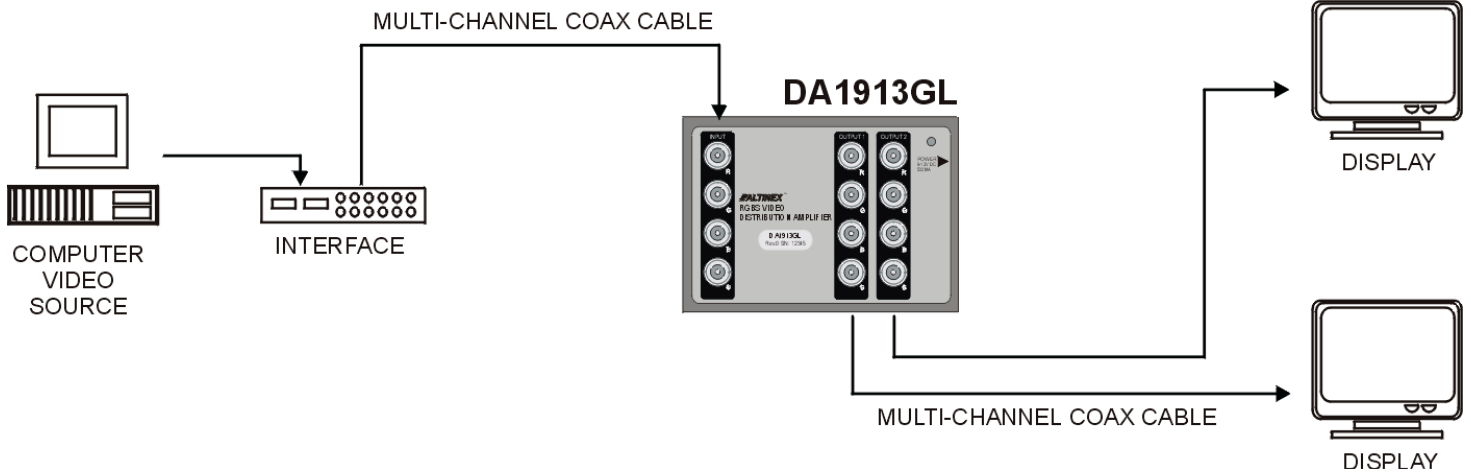
## DESCRIPTION OF DA1913GL 4



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## APPLICATION DIAGRAM

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## INSTALLING YOUR DISTRIBUTION AMPLIFIER

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**Step 1.** Make sure that the proper power supply is being used with the unit.

**The use of an incorrect power supply can result in equipment damage not covered by warranty.**

**Step 2.** Connect the power supply to the unit. The power indicator LED on the front panel will light. This indicates that the unit is operational.

**Step 3.** Connect the high resolution RGsB or RGBS source to the **DA1913GL** using coaxial cables with BNC connectors while making sure that the colors match correctly. Then connect one or two monitors or projectors to the output(s) of the **DA1913GL**. The monitors or projectors must be scan-rate compatible with the source signal resolution. The **DA1913GL** does not affect the scan rate.

**Step 4.** If the image is less than perfect, check all the connections. The unit is very reliable and seldom will this be the cause of malfunction. Poor quality cables may

degrade the performance of the product. Make sure that the cables used are coaxial cables and that all pins are in good condition.

After each step is completed, the unit should now be fully operational.

**CONGRATULATIONS! YOU ARE DONE.**

**If you experience any problems, please call 1-800-258-4623 or 1-714-990-2300 for international calls.**

## OPERATION

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The **DA1913GL** will operate successfully as long as cables are attached properly and other specifications are followed. There are no other adjustments necessary to operate the unit

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## ACCESSORIES 8

Model No.	Description
	<b>RACK MOUNTING BRACKETS</b>
<b>DA1295SX</b>	Rack/Wall/Furniture Mount Mini-brackets (2-"L" shaped brackets)
	<b>POWER SUPPLIES</b>
<b>PS5502US</b>	9V 500mA Power Supply for US
<b>PS5512UK</b>	9V 500mA Power Supply for UK
<b>PS5522AU</b>	9V 500mA Power Supply for Australia
<b>PS5532GR</b>	9V 500mA Power Supply for Germany
<b>PS5542JP</b>	9V 500mA Power Supply for Japan
	<b>4 BNC to 4 BNC COAXIAL CABLE</b>
<b>CB4100MR</b>	Bulk Cable 4 coaxes (500ft minimum)
<b>CB4103MR</b>	3 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4106MR</b>	6 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4112MR</b>	12 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4125MR</b>	25 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4150MR</b>	50 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4175MR</b>	75 feet, 4 BNC to 4 BNC coaxial cable
<b>CB41100MR</b>	100 feet, 4 BNC to 4 BNC coaxial cable
<b>CB41150MR</b>	150 feet, 4 BNC to 4 BNC coaxial cable
	<b>4 BNC to 4 BNC COAX (Super High Resolution)</b>
<b>CB4300MR</b>	Bulk Cable 4 coaxes (500ft minimum)
<b>CB4306MR</b>	6 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4312MR</b>	12 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4325MR</b>	25 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4350MR</b>	50 feet, 4 BNC to 4 BNC coaxial cable
<b>CB4375MR</b>	75 feet, 4 BNC to 4 BNC coaxial cable
<b>CB43100MR</b>	100 feet, 4 BNC to 4 BNC coaxial cable

## FREQUENTLY ASKED QUESTIONS 9

No:	Question	Answer
1	What is the maximum length of cable that can be used with the <b>DA1913GL</b> ?	Compensation for cable loss is automatically made for a distance of 100 feet, though the <b>DA1913GL</b> can drive signals through longer runs depending on the source signal resolution and cable quality.
2	Can I use the <b>DA1913GL</b> power supply to power 2 units simultaneously?	It is not recommended since one power supply is supplied with each unit. Please consider the <b>PS5581SM</b> , a rack mount power supply.
3	Are outputs 1 & 2 buffered?	The <b>DA1913GL</b> has two individually buffered outputs.
4	What is common mode range of the <b>DA1913GL</b> and why is it so important?	The common mode range of the <b>DA1913GL</b> Distribution Amplifier is +/-2V with a video signal of 1V p-p. In most cases, a ground loop voltage will not exceed 200-300mV, so this range is more than enough to handle even the most severe ground loop problems.
5	How will the <b>DA1913GL</b> provide protection from a ground loop in the system?	A ground loop is a type of electromagnetic interference often caused by small, but significant differences in ground voltage between two or more different power sources when equipment using the different power sources is connected by means of video/audio inputs and outputs. A ground loop may also be caused when high

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		current equipment (such as a lighting or air conditioning system) is fed from the same power source as the display equipment.
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## TROUBLESHOOTING GUIDE 10

We have carefully tested and have found no problems in the supplied **DA1913GL** unit; however, we would like to offer the following suggestions:

- Please make sure that input amplitude level is as follows:
  1. Analog signal is less than 1.5V.
  2. Sync signal is less than 0.3V.
- Please use Altinex supplied external power Supply/AC Adapter (9V, 500mA) only.
- Please check settings of Sync Level, Video Level and Input Termination Switches.
- Please make sure that proper quality of cables is used. We recommend Altinex made cables for best results.
- If the problem shows up after continuous usage at higher voltage, higher temperature, higher humidity, or at other extreme environmental conditions, please correct that the problem.

## ALTINEX POLICY 11

### 11.1 LIMITED WARRANTY

Altinex warrants that its products and cables are free from defects in materials under normal use and service. This warranty is limited to repairing at company's factory any part or parts of the product, which upon company's examination shall disclose to be, thus defective. Products considered defective should be returned to company with transportation charges pre-paid within 2 years (90 days for cables) from date of shipment to the purchaser. The warranty is expressly instead of all other warranties expressed or implied. Altinex neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of the products. This warranty shall not apply to any product that shall have been repaired or altered outside of company's factory in

any way so as, in its judgment, to affect its stability or reliability, or that has been subject to misuse, negligence or accident.

### 11.2 RETURN POLICY

It is very important that you receive product that you have ordered and that this product fulfills your need. In the unlikely event that an Altinex product needs to be returned please follow the procedure below:

Altinex will accept product returns for a period of 30 days from authorized Altinex dealers. Products must be returned in an unopened package.

If product has been opened, the restocking fees will apply. For the restocking fee amount, please contact an Altinex Sales Representative.

If product is in your possession for more than 30 days, the restocking fees will apply.

Altinex will not accept any returns on cables or custom products.

If your product is in warranty and needs service, contact the Altinex Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service.

If your product is out of warranty and needs service, contact the Altinex Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service. The service charges will be quoted to you before the actual repairs are done.

### 11.3 CONTACT INFORMATION

#### Sales Department

Phone: 714-990-2300

Fax: 714-990-3303

#### Accounting Department

Phone: 714-990-6088

Fax: 714-990-5778